WHAT IS CLAIMED IS:

1. A radiation imaging apparatus comprising:

radiation detection means including radiation detection elements for detecting radiations which have penetrated an object as electric signals, said elements arranged in a two-dimensional array; and

image display control means for producing a radiation image of the object detected as the electric signals with said radiation detection means as continuous images including a plurality of frames, said image display control means switching a tube voltage of a radiation source for emitting the radiations between a voltage at a time of producing a (2m - 1)th odd image and another voltage at a time of producing a 2mth even image, where m is a natural number, said image display control means further controlling a display device to display a processed image as a dynamic image, the processed image being obtained by performing a subtraction process between the (2m - 1)th odd image and the 2mth even image.

2. A radiation imaging apparatus according to claim 1, wherein said image display control means performs the subtraction process after performing a gradation conversion process or an edge enhancement process to the (2m - 1)th odd image or the 2mth even image as occasion demands.

3. A radiation imaging apparatus according to claim 1 or 2, wherein said radiation detection elements include wavelength conversion bodies for converting the radiations into visible light and photoelectric conversion elements for converting the visible light converted by said wavelength conversion bodies.

4. A radiation imaging apparatus according to claim 3, wherein said wavelength conversion bodies each include a principal component selected from the group consisting of Gd_2O_2S, Gd_2O_3, CsI.

5. A radiation imaging apparatus according to claim 3 or 4, wherein said photoelectric conversion elements are MIS type sensors or PIN type sensors, both using amorphous silicon semiconductor.

6. A radiation imaging apparatus according to claim 5, wherein

each of said MIS type sensors is configured to include a first metal thin film formed as a lower part electrode, an insulating layer formed on said first metal thin film layer for obstructing electrons and holes, said insulating layer made from amorphous silicon nitride, a photoelectric conversion layer formed on said insulating layer, said photoelectric

conversion layer made from amorphous silicon hydride, an N type injection obstruction layer formed on said photoelectric conversion layer for obstructing injections of the holes, and a transparent electrode layer formed on said injection obstruction layer as an upper electrode or a second metal thin film layer formed on said injection obstruction layer, and

said radiation imaging apparatus supplies an electric field to each of said MIS type sensors in a direction to lead the holes from said photoelectric conversion layer to the second metal thin film layer in a refresh mode, and

said radiation imaging apparatus supplies an electric field to each of said MIS type sensors in a direction in which the holes generated by the radiations, which have entered said photoelectric conversion layer, are stayed at said photoelectric conversion layer and the electrons are led to said second metal thin film layer in a photoelectric conversion mode, and further

said radiation imaging apparatus detects the holes accumulated in said photoelectric conversion layer in said photoelectric conversion mode or the electrons led to said second metal thin film layer as light signals.

7. A radiation imaging apparatus according to

claim 1 or 2, wherein

said radiation detection elements are made from a material selected from the group consisting of lead iodide, mercuric iodide, selenium, cadmium telluride, gallium arsenide, gallium phosphide, zinc sulfide and silicon, said material absorbs the radiations to convert the absorbed radiations into the electric signals directly.

8. A radiation imaging system comprising:

a radiation source for emitting radiations; and

a radiation imaging apparatus including radiation detection means having radiation detection elements for detecting the radiations, which have emitted from said radiation source and have penetrated an object, as electric signals, said elements arranged in a two-dimensional array; and image display control means for producing a radiation image of the object detected as the electric signals with said radiation detection means as continuous images including a plurality of frames, said image display control means switching a tube voltage of said radiation source for emitting the radiations between a voltage at a time of producing a (2m - 1)th odd image and another voltage at a time of producing a 2mth even image, where m is a natural number, said image display control means further controlling a

display device to display a processed image as a dynamic image, the processed image being obtained by performing a subtraction process between the (2m - 1)th odd image and the 2mth even image.

9. A radiation imaging method comprising the steps of:

detecting radiations which have penetrated an object as electric signals using radiation detection elements arranged in a two-dimensional array; and

producing a radiation image of the object detected as the electric signals at the step of detecting radiations as continuous images including a plurality of frames, and switching a tube voltage of a radiation source for emitting the radiations between a voltage at a time of producing a (2m - 1)th odd image and another voltage at a time of producing a 2mth even image, where m is a natural number, and further controlling a display device to display a processed image as a dynamic image, the processed image being obtained by performing a subtraction process between the (2m - 1)th odd image and the 2mth even image.